朝比奈泰彦*: 地衣類雑記 (§§ 211~212)

Yasuhiko ASAHINA*: Lichenologische Notizen (§§ 211~212)

(Plate XXIV)

§ 211. On Subsect. Angulosae Duvign. of the Sect. Elongatae Mot. of the Genus *Usnea*.

1952 Duvigneaud[1] proposed to create a new subsection Angulosae Duvign. within sect. Elongatae Mot. in the genus *Usnea*[2]. As the type of his new subsection he has adopted *Usnea gigas* Mon., an African species and hitherto a member of subsection Goniodes Mot. Duvigneaud's principle to establish a new subsection may be seen from the following citation:

"Subsect. Goniodes Mot. emend Duvign.: axis sat tenuis, compactus, vix lacunosus; medulla crassa plusminusve laxa; Typus *U. goniodes* Stirt.

Subsect. Angulosae Duvign.: axis crassus, densissime lacunosus saepissime fistulosus aut excavatus, lacunis corpusculis luteis impletis; medulla sat angusta densa vel densissima. Typus *U. gigas* Mot."

In connection with my recent chemical research of *U. gigas* Mot.,[3] in which the presence of constictic acid, together with usnic acid and diffractaic acid was confirmed, I should like to take up a morphological study of the same lichen to comment on the Duvigneaud's principle to create a subsection Angulosae.

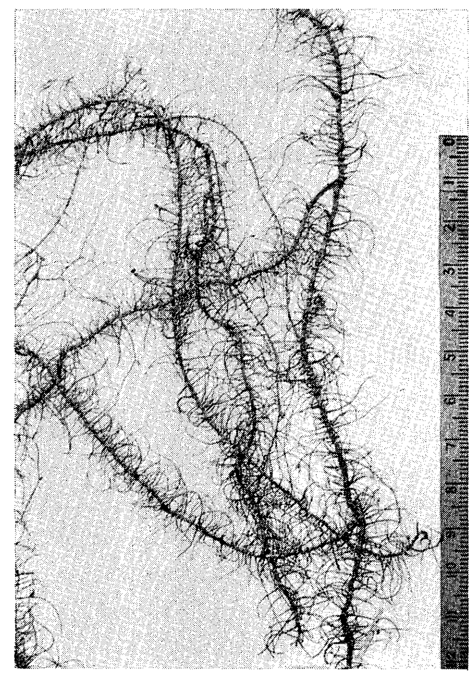
The axis of *Usnea gigas* has in general central cavity and the main body is composed of longitudinally running fibres, interstices of which contain light brownish corpuscules. The alternate arrangement of colorless fibres and light brownish corpuscules contained in the interstices display a fret-work like pattern of its transverse section, which must be distinguished from the occurrence of a few darker interstices in the main body of colorless fibres sometimes seen in the axes of lichens of subsection Longissimae Mot. These corpuscules are not affected by dilute acids, but is partly dissolved by 5% alkali giving yellowish solution. This extraordinary

* National Science Museum, Ueno Park, Tokyo, Japan (TNS).

1) Bulletin de la Soc. Bot. Belge, t. 85, pp. 106-108. 1952.
2) Motyka, Monograph., p. 387.
3) Asahina, J. Jap. Bot., **43**: 98. 1968.

structure was expressed by Motyka as "fascis sordidis crebre interstinctus et dilaceratus."

If we lay special weight on this axial structure and adopt the Duvigneaud's subsection, then besides *U. gigas* Mot., *U. bakongensis* Duvign., *U. Fernandiae* Duvign., *U. arguta* Mot., which were mentioned by Duvigneaud also *U. indigena* Mot., *U. eburnea* Mot. and a Japanese lichen *U. shikokiana* Asahina[4] must be transferred from subsection Longissimae Mot. to the subsect. Angulosae Duvign. Perhaps *Usnea contorta* Jatta might belong also to the subsection Angulosae, though Motyka had described its axis simply as "hyphis sordidis interstinctis." At present I have only a few doubtful specimens of *U. contorta* Jatta, some of which contain protocetraric acid, while the others contained stictic acid. A reference specimen of *U. contorta* Jatta borrowed from Lund Herbarium 1657 c, Madagascar. Périnet sur rameau, 9/11, 1951. Leg. R. Benoist contained stictic acid. On account of the absence of representative specimens of *U. chloreoides* Mot., *U. africana* Mot., *U. duriusculus* Mot., *U. repens* Mot. and *U. sericea* Mot., their real systematic position remain unsettled.


Fig. 1. *Usnea neoguineensis* Asahina

Usnea neoguineensis Asahina nov. sp. (Subsect. Angulosae Duvign., sect. Elongatae Mot.)

Thallus pendullus, valde elongatus (usque ad 1 m vel ultra), rigidus, elasticus, luteolo-stramineus, opacus, sat rare dichotome ramosus et crebre ramulosus. Basis primaria indistincta, pars basalis attenuata, obscurata vel pallida. Bases secundariae frequentes, ex nonnullis ramulis perpendicularibus transformatis. Rami principales usque ad 1.5 mm crassi, longe flexuoso curvati, distincte angulati, statim supra basin

4) Asahina, J. Jap. Bot., **40**: 172. 1965.

tantum bene teretes, ceterum maxima parte marginibus obtusis notati, ad ramos tenuiores distinctius subteretes, in tota longitudine crebre annulati aut sat irregulariter areolato fracti, annulis vulgo 0. 5–2. 0 mm longis, fissuris angustis et saepe regeneratis, ad fracturas obtusatis, superficies saepe verruculis concoloribus vel apice albicantibus et propagla isidiiformia singula aut pauca producentibus dispersa. Ramuli laterales ca 10–20 pro 1 cm longitudinis rami, fere laeves vel indistincte verruculosi. Apothecia non visa. Soredia minutissima, verrisimiliter isidiosa in verruculis singulatim vel pauca excrescentia. Cortex ca 50 μ crassus, medulla 100–150 μ crassa, creberrima, K+ lutescens, P+ miniatorubens; axis 600–900 μ crassus, centro vulgo cavatus, hyphis sordidis crebre interstinctus. Acidum usnicum et acidum sticticum unacum acido constictico continens.

New Guinea. Morobe District, Middle Creek logging area. Bulolo, 850 m. Leg. Syo Kurokawa, No. 5787 (Typus), (1965).—preserved in the herbarium of the National Science Museum, Tokyo, Japan (TNS). Other specimens examined: New Guinea. Eastern Highland District, Andandara logging area, 25 miles south of Kainantu, 1600 m. Syo Kurokawa, nos. 6042 and 6062.

Philippines. Virgin dipterocarp forest, 850 m. ILCO logging area, ca 50 miles south of Fabrica, near Mt. Mandalagan. Hale et Banaag, no. 26577 (1964).

Formosa. Chitou, Prov. Nantou. Syo Kurokawa, No. 1417 pp (1964).

var. **gracilior** Asahina nov. var.

Thallus usque ad 30 cm longus. Rami principales gracilior, non ultra 1 mm crassi, angulati vel fere alati, annulato fracti, apicem versus subteretes, verruculis fere destituti. Ceterum ut in typo.

New Guinea. Eastern Highland District: Andandara logging area, 25 miles south of Kainantu. 1600 m. Syo Kurokawa, No. 6061 (1965)—Type of var. preserved in TNS. Other specimens examined. New Guinea. Morobe District: Middle Creek logging area, Bulolo. 850 m. Syo Kurokawa, nos. 5786, 5787. (1965).

Australia. Queensland: Eacham Lake, Northern Tableland, 780 m. Syo Kurokawa, no. 5638. Beechmont, 540 m. Syo Kurokawa, No. 5543 (1965). This oceanian lichen is also distributed in Pacific districts of Asia—Java, Philippines, Thailand, and Formosa. Sometime ago United States National Herbarium (Smithsonian Institution) distributed a lichen specimen entitled *Usnea Schadenbergiana* Goeppert et Stein. Dupl. det. by Motyka, XII. 1957. China: between Ping Yung and Tai Suang, Southern Chekiang. Alt. 500–900 m. R. C. Ching, 2158. July 16–25, 1924. An individual of the above specimens preserved in TNS is a mixture of *Usnea*

sublacunosa (Elenk.) Sav. and miserable fragments of *Usnea neoguineensis* var. *gracilior* Asah.—an evidence, that this species occurs also in eastern China.

Usnea neoguineensis Asah. resembles closely *U. eburnea* Mot. from Madagascar. As the representative specimen of latter species I have consulted a specimen distributed by Buly de Lesdain. On the mount paper of that specimen there are notes of date and locality, corresponding with those of the type specimen and a handwriting of B. de Lesdain "nov. sp. e loco classico". This specimen is rather young plant and resembles closely *Usnea neoguineensis* var. *gracilior* Asahina, so that one might suppose *U. neoguineensis* as a vicarious species of *U. eburnea* in the Oceania and Pacific area.

§ 212. **Usnea submekista** Asahina nov. sp. (Subsect. Longissimae Mot., Section Elongatae Mot.)

Thallus ca 50 cm (vel ultra) longus, pendulus, filamentosus, sat mollis, cinereo-viridis, opacus. Basis primaria non visa, rami filamentosi rare dichotome ramosi, 0.8–1.0 mm crassi, subteretes vel subangulati, corticati, cortice valde inaequali, squamescente diffracto, sat crebre spinulis minutis isidiiformibus tecti. Ramuli crebri 0.5–1.0 cm longi, ad basin laevissime incrassati, ad apices laeviter attenuati, minores fere laeves, maiores indistincte tuberculati et sorediosi, soredia isidiosa(?). Apothecia non visa. Cortex 50 μ crassus, mollissimus, medulla ca 50 μ crassa, crebra; axis deformatus, 750×1000 μ, decolor et pellucidus, sed in centro excavatus. Reactiones medullae: K−, P+ rubescens. Mat. chim. prop.: acidum usnicum et acidum protocetraricum.

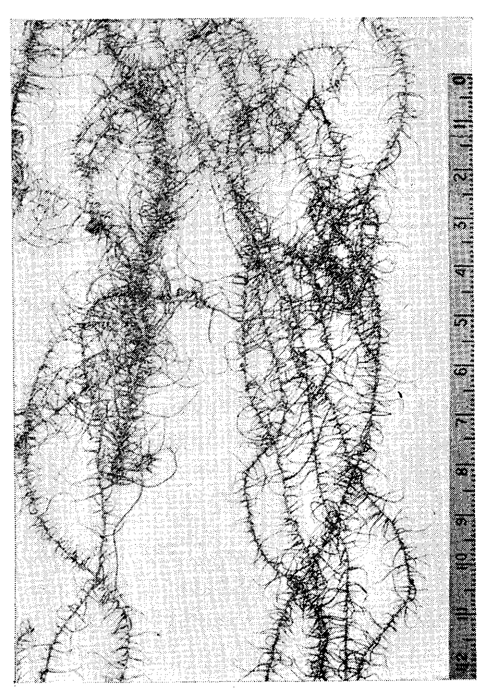


Fig. 2. *Usnea submekista* Asahina

New Guinea. Morobe District: Middle Creek logging area. Bulolo.

850 m. Syo Kurokawa, No. 5787 pp. Nov. 1965. Typus in herb. TNS.

External appearance of this new species resembles closely that of *Usnea mekista* Stirt.[5] But the latter has black axis and contains fumar-protocetraric acid instead of protocetraric acid.

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1952年に Duvigneaud は *Usnea* 属の或者が特殊の構造の中軸を持つことに着眼し sec. Elongatae 中の subsec. Goniodea Mot. から一部を分離して subsec. Angulosae Duvigneaud と云う亜節を創設した。そして其のタイプはアフリカ産の *U. gigas* Mot. で *U. bakongensis*, *U. Fernandiae*, *U. arguta* を同亜節に編入した。筆者はこの問題の中軸の構造を更に詳しく検査して Duvigneaud の所説を確認し同亜節に属する新種がニューギニア及大平洋地域の亜細亜諸国に産する事を明かにし，尚この新種に混入して居た別の1種を新種として発表した。

Explanation of Plate XXIV

Y. ASAHINA: Lichenologische Notizen §211～212

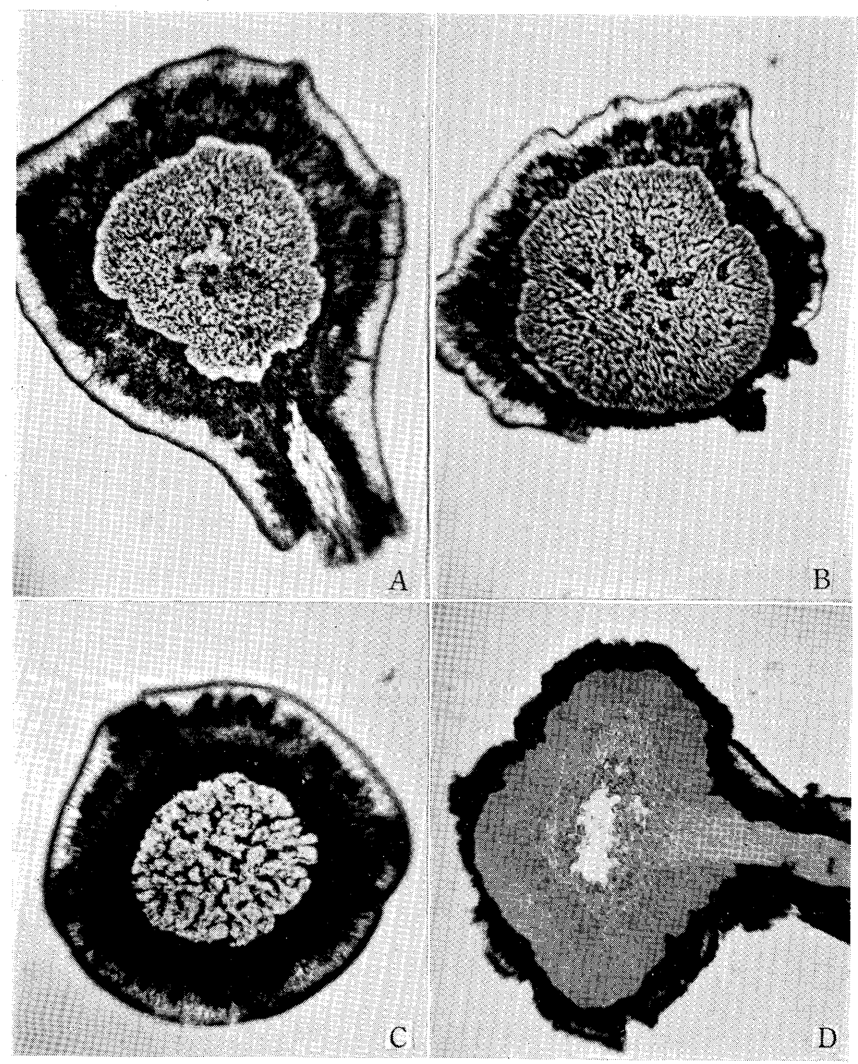
Transverse section of thallus. A: *Usnea gigas* Mot. B: *Usnea neoguineensis* Asah. C: *Usnea shikokiana* Asah. D: *Usnea submekista* Asah.

□吉井良三: **洞穴学ことはじめ** pp. 200, figs. 28, 1968年8月，岩波新書 (No. 688)。

日本における洞穴の科学の創立と西欧のそれへの追尾・並立の主役を演じた著者の体験。さらに内外の同学の士との交情と，数多い洞穴探険のスリルにあふれる記録を通じて，分類学の方法論をいきいきと描いた。氏の専門とする（あるいは偶然そのようになった）トビムシ類（昆虫類？）を主材料として，日本の陸土中に案外に多い洞穴の分布と，その古生物学史，洞穴生物の進化を解明し，日本陸塊の地史的区分に及ぶ。洞穴の分布はそこに棲む生物群にとっては，あたかも大洋中に集散する孤島群のごとくであり，その生物相の研究には相似性がある。この書は一面，一人の生物学者の成長：研究テーマの発展と行きづまり，それからの脱却の率直な自叙伝である。著者の研究はさらに中国大陸と東南アジアを指向する。悩みをもつ若い研究者にはげましを与え，少し年の多い人々には自己の研究の懐古・反省に誘う好著であると思われる。著者は京都大学教養部所属。 (津 山 尚)

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5) Tested with Herb. ind. orient. no. 1718 of Hooker and Thomson's Himalayan specimen.



Y. Asahina: Lichenologische Notizen (§ 211～212)

Transverse section of thallus. A: *Usnea gigas* Mot. B: *Usnea neoguineensis* Asah. C: *Usnea shikokiana* Asahina D: *Usnea submekista* Asahina